

The Examiner stated that Kohjin discloses a technique of masking the taste, acidity and a scent from the salt of food by using 5' uridylic acid sodium (UMP) or 5' cytidylic acid sodium (CMP). Also, Kohjin describes the types of food to which 5' uridylic acid sodium (UMP) or 5' cytidylic acid sodium (CMP) can be added to, some examples are miso soup, vinegar, bitter orange juice, etc.

The presently claimed invention is directed to a composition and a method for inhibiting the sensory perception of **bitterness**. The inhibitors of this invention when administered to a subject in an effective amount may be used as flavor enhancers in foods and pharmaceuticals to overcome their **bitter taste**. Wherein, the inhibitor is a purine or pyrimidine group, or derivative thereof, and an ionizable phosphate or other anionic organic molecule.

The Applicant acknowledges that Kohjin describes the use of 5'-uridylic acid sodium (UMP) and 5'-cytidylic-acid sodium (CMP) as additives to foods. However, it should be noted that the sense of taste is divide into five predominant categories, of which bitter and salty are distinguished. The cited prior art relates to a "technique of **masking** the taste, acidity, and scent from the **salt of food**" (see Kohjin, Detailed Description at paragraph [0001]). Specifically, the Kohjin reference teaches the use of 5'-uridylic acid sodium (UMP) and 5'-cytidylic-acid sodium (CMP) as a technique for "**masking**" the **salty taste** of natural and processed foods (see Kohjin at paragraph [0006]). Further, as stated in the Object of the Invention, "the purpose of this invention -- the salt of food -- it is offering the technique of masking these without almost giving change to a pungent taste, acidity, the effective masking technique of a scent, especially other tastes".

Applicant respectfully disagrees with the Examiner and maintains that the cited prior reference teaches the use of 5'-uridylic acid sodium (UMP) and 5'-cytidylic-acid sodium (CMP) for masking the salty taste of foods. In this regard, Applicant believes the phrase "bitter orange juice" refers to the juice of the plant *Citrus aurantium*, whose common name is "bitter orange", and relates to the acidic taste property masked by 5'-uridylic acid sodium (UMP) and 5'-cytidylic-acid sodium (CMP). In support, Kohjin teaches "With the food said by this invention... such as food which has acidity, such as fruit-juice drinks, such as lemon and an orange,..."

(see Kohjin, paragraph [0007]). Applicant wishes to point out that the term "**bitter**" is not found anywhere else in the reference. More importantly, the reference is replete with the "technique of masking a pungent taste, acidity, or a scent", (see Kohjin, Claim 1, paragraphs [0001], [0003], [0004], [0005], [0006], [0010] and [0030]). Specifically, the "pungent taste" of salt (see Kohjin at paragraph [0015]) in food as represented in the example 1 which contains 162g of salt, 120g of sodium glutamates, and example 2 which contains soy sauce, 5g MSG, were masked by UMP and CMP and administered to test subjects for their taste masking effects.

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Significantly, the term "pungent" is defined in Webster's Ninth New Collegiate Dictionary as: sharply painful; having a stiff and sharp point; marked by a sharp incisive quality (copy attached hereto). As distinguished from bitter defined as: 1 a: being or inducing the one of the four basic taste sensations that is peculiarly acrid, astringent, or disagreeable and suggestive of an infusion of hops – compare salt, sour, sweet (copy attached hereto). Furthermore, the use of the terms "acidity" and "a scent" neither disclose nor suggest a "bitter" tastant.


In sharp contrast, the presently claimed invention discloses a novel method which "abrogate the perception of **bitterness** of bitter tastants" (see Specification page 6, lines 1-2, Claims 8, 13, 21 and 26), by inhibiting the activation of G-proteins by bitter tastant-stimulated taste receptors and results in responses which indicate that the sensation of bitterness is diminished (see Specification at page 5, paragraph [0009]). The sense of taste can be divided into five predominant categories: bitter, salty, sour, sweet and umami (the Japanese word describing the taste of monosodium glutamate; Herness, M.S. & Gilbertson, T.A., 1999, *Annu. Rev. Physiol.* 61:873-900). The presently claimed invention inhibits bitter taste perception, whereas the cited prior art teaches a composition to mask the salty taste of food (See Kohjin at paragraph [0005]).

The Kohjin reference clearly does not teach **inhibiting** the **bitter** taste of a bitter tastant. For these reasons the § 102(b) rejection over Kohjin is improper. Removal of the rejection is therefore requested.

In view of the foregoing discussion, applicant respectfully submits that the pending claims are allowable over the cited prior art. Allowance of the claims is therefore respectfully solicited.

An early and favorable action is earnestly solicited.

Respectfully submitted,



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